

WILDLIFE MANAGEMENT UNIT 30 - PINE VALLEY

Boundary Description

Iron and Washington counties - Boundary begins at I-15 and the Utah-Arizona state line; north on I-15 to SR-56; west on SR-56 to the Lund Highway; northwest along the Lund Highway to the Union Pacific railroad tracks at Lund; southwest on the Union Pacific railroad tracks to the Utah-Nevada state line; south on this state line to the Utah-Arizona state line; west on this state line to I-15 and beginning point.

Management Unit Description

This unit was divided into 3 subunits; 30A West Pine Valley, 30B Comanche, and 30C Pine Valley/Browse prior to 1992. All subunits (A, B, and C) were combined for deer in 2001. The Pine Valley wildlife management unit encompasses the Antelope Range, Harmony Mountains, Pine Valley Mountains, Bull Valley Mountains, and the Beaver Dam Mountains. Unit 30 contains approximately 300,053 acres of summer range, 78% of which is managed by the U.S. Forest Service as part of the Dixie National Forest. Winter range encompasses 466,484 acres, 41% of which occurs on Forest Service lands and 41% occurs on lands administered by the Bureau of Land Management. The I-15 corridor runs on the eastern side of the unit, effectively eliminating deer movement east due to a deer proof fence.

In the past, the assumption has been that summer range is a limiting habitat factor on this unit. However, in reality, the situation is not that simple. There is also a resident deer population in the New Harmony area which further complicates management.

Summer range is confined to elevations above 6,000 to 6,500 feet on the New Harmony and Pine Valley Mountains. The vegetational character is principally oakbrush and mountain brush on the Harmony Mountains and on the lower slopes of the Pine Valleys. Aspen and coniferous types are common on the higher portions of the Pine Valley Mountains, but much less prevalent on the Harmony Mountains. Sagebrush-grass parks and meadowlands can be found at the summit of the Harmony Mountains. These are important areas to deer for short periods during the summer which have been heavily impacted by cattle. Many similar, but more interspersed parklands occur on the northern end of the Pine Valley Mountains. Summer deer concentrations are primarily on the Harmony Mountain and the north end of the Pine Valleys. Relatively few deer summer south of Timber Mountain within unit 30C.

Herd unit 30 winter range varies greatly, depending upon elevation. North of the Great Basin-Colorado River divide, pinyon-juniper and sagebrush-grass predominate. South of the divide, pinyon-juniper is still important, but there are increasing amounts of a desert shrub type dominated by shrub live oak (*Quercus turbinella*) and several other browse species not often found to the north. Both areas possess important acreages of seeded range, most notably east of Pinto at Page Ranch, Woolsey Ranch, New Harmony and Pintura Bench. Deer tend to concentrate on these sites, especially the latter three. The winter range south of Pintura currently supports few deer. A comprehensive study conducted by the Southern Region of the Division of Wildlife Resources on deer population dynamics and habitat use, has contributed greatly to understanding of this herd unit. This study was especially helpful in locating trend studies on critical sites. For example, it is now evident that fawning and fawn rearing habitat are very critical for this unit. Accordingly, studies have been located at known fawning areas. In addition, the winter range is now better defined and critical areas have been identified. These sites were also sampled.

The herd unit varies with elevations of 10,000 feet on the Pine Valley Mountains to lower and drier areas such as Motoqua at an elevation of 4,000 feet. Vegetationally, the summer range consists of dense conifers with a

few aspen clones and dry meadows at higher elevations, and mixed oakbrush, mountain brush, southern desert shrub, and sagebrush-grass on lower areas. Most of the summer range is within the officially designated "wilderness area" which is open to livestock use.

Winter range is extensive, but not uniformly utilized. Pinyon-juniper is the dominant vegetative type, but there are also large areas of sagebrush-grass, southern desert shrub, oakbrush, and mountain brush. Important critical winter concentration areas include the area east of Central, the lower Pinto Creek drainage, the Antelope Range, Iron Mountain, the Shoal Creek drainage, Moody Creek, Tobin Bench, and the middle portion of the East Fork of Beaver Dam Wash. Only during the most severe winters do deer utilize the lower portions of the winter range, especially the Mojave desert areas. During the spring, summer, and fall, critical concentration areas include the higher elevations of the Bull Valley Mountains, Lost Peak, Maple Ridge, the slopes surrounding Pine Valley Reservoir, the meadows of the Whipple Valley area, and Flattop Mountains.

Herd Unit Management Objectives

Target winter herd sizes for the entire unit is modeled at 16,000 deer. Herd composition for the Pine Valley area is to be managed at 15 bucks:100 does with 30% of the bucks being 3 point or better.

Trend Study Site Description

Trend study sites were originally established on the unit in 1982. Most of these sites were reread in 1992, and 1998. In 1986, 4 study sites were established on a burned area on the east side of the Pine Valley mountains. These sites were reread in 1987, 1992, and 1998. In 1998, several of the sites established in 1982 were discontinued and 3 sites were reread that were not read in 1992. In addition, 4 new study sites were established to cover important areas which were not previously being monitored. In 2003 most of the studies read in 1998 were revisited and 3 new trend studies were added.

SUMMARY

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Twenty-two trend studies were read in the Pine Valley Wildlife Management unit in 2003. Twelve of these trend studies were originally established in 1982. Three sites, Spirit Creek South Burn (30-58), Upper Horse Creek (30-59), and Jones Hollow (30-60), were established in 1986 to monitor rehabilitation efforts on a large wildfire. Eleven of the 12 sites established in 1982, were reread in 1992 and all 12 sites were reread in 1998. Four additional trend studies, Bullion Canyon (30-54), Quichapa Canyon (30-55), Woolsey Seeding (30-56), and Summit Spring (30-57), were established in 1998. During the 2003 reading, new trend study sites were established at Tobin Bench (30-61), North Hills (30-62), and Holt Canyon (30-63). Fifteen of the 22 trend studies on unit 30 sample deer winter ranges while the other 7 sample transitional and/or summer ranges.

Winter Range Trend

Average trends for the winter range sites are below stable for all categories due to extreme drought conditions. Average soil trend is 2.7, or just below stable. Browse trends average 2.0. Wyoming and/or mountain big sagebrush is the key browse species on 9 of the 12 winter range sites that have been surveyed more than once. One site, Northwest of Enterprise (30-52), burned prior to the 2003 reading and all sagebrush was eliminated. The number of decadent sagebrush increased on 8 of the remaining 9 winter range trend study sites. Young recruitment was also down on all but one site. Browse trends were down or slightly down on 8 of the 12 winter range sites. Two of these sites had downward trends due to wildfire, Pahcoon Bench (30-46) and Northwest of Enterprise (30-52). Conditions at Southwest of Newcastle (30-29), Grapevine Spring (30-42), and Bullion Canyon (30-54), were particularly bad and considerable sagebrush die-off had occurred.

Herbaceous trends were also down and have shown a steady decline in trend since 1992. Average herbaceous trend is currently only 1.8. Drought conditions have been extremely hard on these lower elevation winter ranges and 10 of the 12 winter range sites displayed a decline in cover and nested frequency of perennial grasses. On average, cover declined by 48%. Perennial forb cover and frequency are poor on most of these winter range sites and drought conditions have caused a 47% average decline in cover and a 32% decline in nested frequency of perennial forbs. One positive result of the dry conditions is a decline in annual cheatgrass. All 12 sites displayed a decline in cover and nested frequency of cheatgrass. On average, cover declined threefold while nested frequency declined twofold. This decline should not be mistaken for an elimination of cheatgrass on these sites. The drop in cover and frequency was the result of drier than normal precipitation patterns, especially during the fall and spring periods. Cheatgrass will recover with a return to normal precipitation.

Summer/Transitional Range Trends

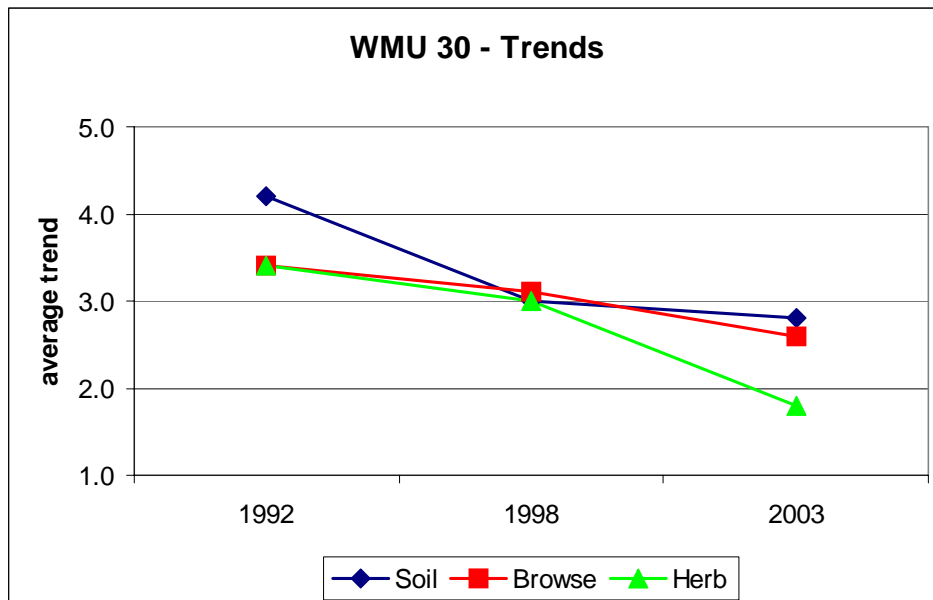
Seven trend studies were read on higher elevation transitional and summer ranges. These sites also have been effected by drought but not to the level of the winter range studies. Average soil trends are stable at 3.1. Average browse trends have remained at 3.6 since 1992 which is slightly up. It should be noted that the browse component of transitional and summer range is not nearly as important as grasses and forbs. An upward browse trend on summer range should be considered a negative change on most sites. Sagebrush is of little importance as a forage source on a site like Harmony Mountain Summit (30-5) which is located at 8,100 feet. Sagebrush is very abundant on this site at a density of 8,640 plants/acre with an average cover value of 19%. Young plants are abundant and age class analysis suggests an expanding population. An increase in browse cover on this type of site will reduce the abundance of grasses and forbs which is the key forage source for deer in the spring and summer. Herbaceous trends have steadily declined since 1992 when the average trend was rated at slightly up at 4.1. Average trends were stable in 1998 averaging 3.5 but declined to

1.7 in 2003, slightly lower than the average for winter range sites. Upper Horse Creek (30-59), had a stable herbaceous trend while the other six sites had down or slightly down herbaceous trends. Five of the 7 summer/transitional trend studies showed a decline in perennial grass cover while 4 of the 7 had a drop in nested frequency. Perennial grass cover declined 40% on average while nested frequency declined 23%. All 7 trend studies declined in perennial forb cover and 5 of the 7 sites displayed a decline in nested frequency. Cover declined an average of 34% while nested frequency declined 20%.

These downward trends are caused primarily by drought. Precipitation data from weather stations at Cedar City, New Harmony, Gunlock, Veyo, and Enterprise, show that 3 of the past 4 years were well below normal with respect to annual precipitation (Utah Climate Summaries 2004). Conditions were exceptionally dry in 1999 and 2002 at 66% and 41% of normal annual precipitation respectively. Spring precipitation (April-June) was also very dry from 2000 to 2003, averaging only 53% of normal. Conditions were extremely dry during the spring of 2002 when just 12% of normal precipitation was recorded. These dry spring periods are the primary factor in downward herbaceous trends in unit 30. The consecutive years of drier than normal conditions appear to have caused a dry soil profile in many areas. Average soil temperature on many sites was much higher in 2003 than temperatures recorded in 1998 when precipitation was well above normal. Dry soil profiles have contributed to sagebrush die-off in some areas due to winter dessication. Precipitation and trend summaries can be found below.

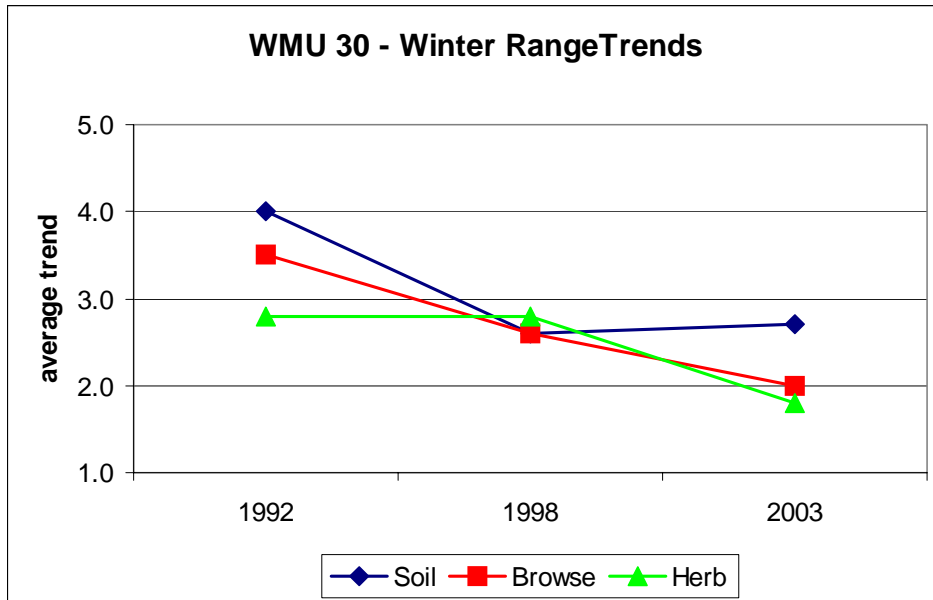
Unit 30 Average Trends

	1992	1998	2003
Soil	4.2	3.0	2.8
Browse	3.4	3.1	2.6
Herb	3.4	3.0	1.8
	15 sites	16 sites	19 sites



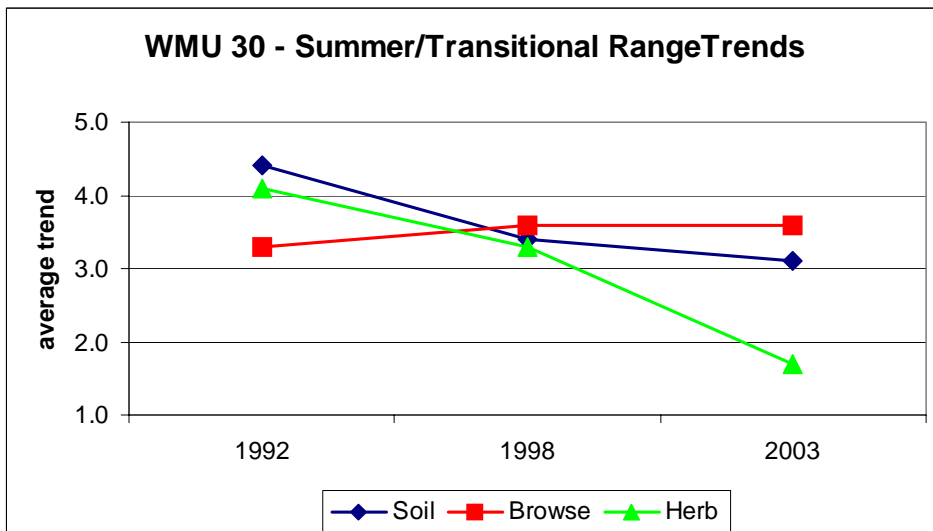
Unit 30 Winter Range Average Trends

	1992	1998	2003
Soil	4.0	2.6	2.7
Browse	3.5	2.6	2.0
Herb	2.8	2.8	1.8
	8 sites	8 sites	12 sites

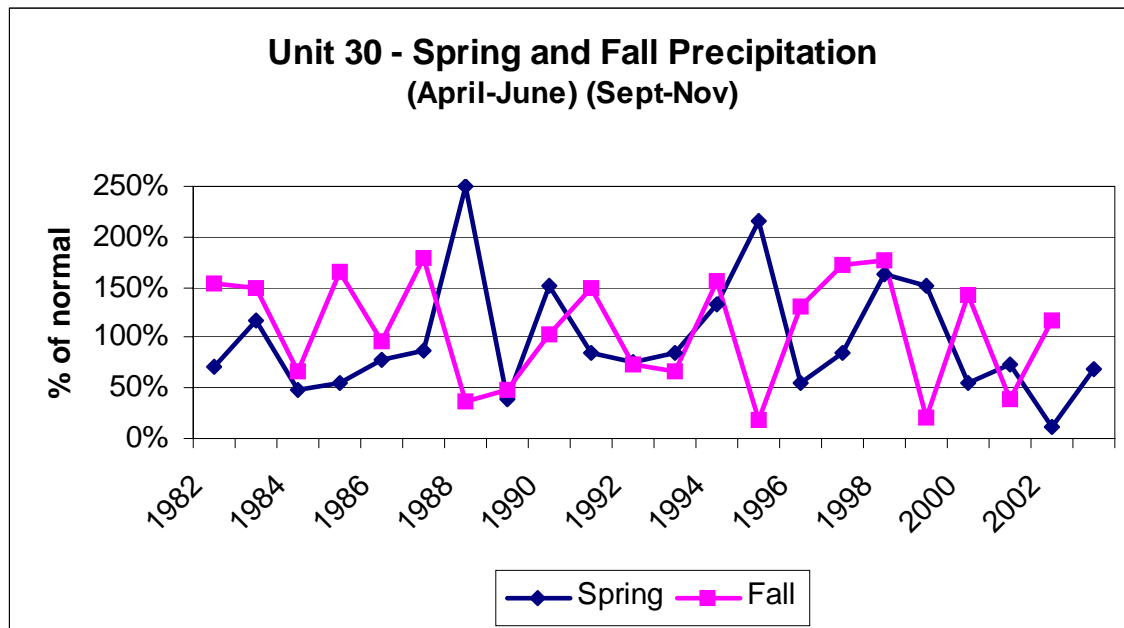
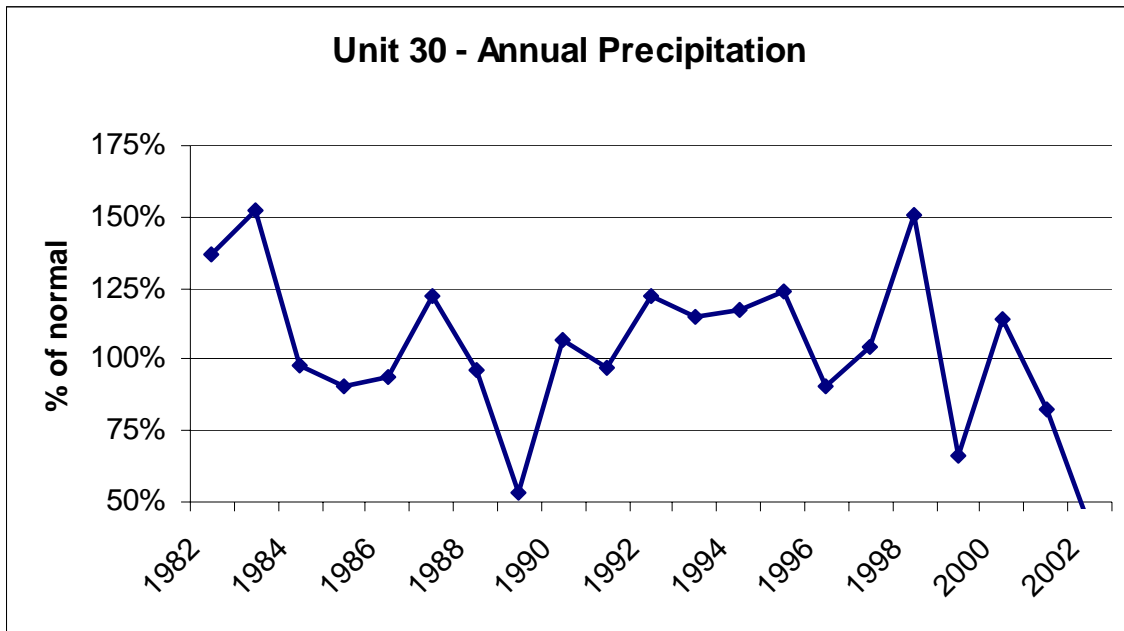


Unit 30 Transitional/Summer Range Average Trends

	1992	1998	2003
Soil	4.4	3.4	3.1
Browse	3.6	3.6	3.6
Herb	4.1	3.5	1.7
	7 sites	8 sites	7 sites



Below are precipitation graphs for the Pine Valley unit. Data represents percent of normal precipitation averaged for 5 weather stations which include Cedar City, New Harmony, Gun Lock, Veyo, and Enterprise (Utah Climate Summaries 2004).



Trend Summary

	Category	1982	1992	1998	2003
30-3 Upper Broad Hollow	soil	est	4	3	3
	browse	est	1	3	2
	herbaceous understory	est	3	3	2
30-5 Harmony Mountain Summit	soil	est	5	3	3
	browse	est	4	3	5
	herbaceous understory	est	5	2	1
30-13 Black Ridge	soil	est	2	3	2
	browse	est	5	3	3
	herbaceous understory	est	2	3	1
30-26 Grassy Flat Ridge	soil	est	3	3	3
	browse	est	4	5	5
	herbaceous understory	est	4	2	2
30-29 Southwest of Newcastle	soil	est	5	2	2
	browse	est	4	2	1
	herbaceous understory	est	4	2	3
30-35 Deep Canyon	soil	est	3	2	4
	browse	est	4	4	5
	herbaceous understory	est	4	2	2
30-38 Wide Canyon	soil	est	3	3	3
	browse	est	4	2	1
	herbaceous understory	est	3	1	2
30-40 Telegraph Draw	soil	est	5	2	3
	browse	est	5	3	5
	herbaceous understory	est	3	3	1
30-41 Joe Spring	soil	est	5	3	3
	browse	est	1	4	2
	herbaceous understory	est	3	5	1

(1) = down, (2), slightly down, (3) = stable, (4) = slightly up, (5) = up
 (est) = established, (n/a) = no trend, (susp) = suspended, (NR) = not read

	Category	1982	1992	1998	2003
30-42 Grapevine Spring	soil	est	3	3	3
	browse	est	5	4	1
	herbaceous understory	est	1	4	1
30-45 Flat Top Mountain	soil	est	NR	3	3
	browse	est	NR	3	2
	herbaceous understory	est	NR	4	1
30-46 Pahcoon Bench	soil	est	5	3	2
	browse	est	3	2	1
	herbaceous understory	est	3	1	1
30-52 Northwest of Enterprise	soil	est	5	2	2
	browse	est	1	2	1
	herbaceous understory	est	3	5	2
	Category			1998	2003
30-54 Bullion Canyon	soil			est	3
	browse			est	1
	herbaceous understory			est	2
30-55 Quichapa Canyon	soil			est	3
	browse			est	2
	herbaceous understory			est	3
30-56 Woolsey Seeding	soil			est	3
	browse			est	3
	herbaceous understory			est	1
30-57 Summit Spring	soil			est	3
	browse			est	3
	herbaceous understory			est	3

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	Category	1987	1992	1998	2003
30-58 Spirit Creek South Burn	soil	est	5	5	3
	browse	est	5	4	3
	herbaceous understory	est	3	4	2
30-59 Upper Horse Creek	soil	est	5	4	3
	browse	est	2	3	3
	herbaceous understory	est	5	4	3
30-60 Jones Hollow	soil	est	5	4	n/a
	browse	est	3	3	n/a
	herbaceous understory	est	5	3	n/a
	Category				2003
30-61 Tobin Bench	soil				est
	browse				est
	herbaceous understory				est
30-62 North Hills	soil				est
	browse				est
	herbaceous understory				est
30-63 Holt Canyon	soil				est
	browse				est
	herbaceous understory				est

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